Supplementary Material (ESI) for New Journal of Chemistry

Support Information

Fabrication of Mesoporous Silica-Fiber/Gold Core-Shell Hybrid Nanostructure Enhancing Electron Transfer in Glucose Oxidase Biosensor

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Figure S1. Infrared spectra of (a) non-heated and (b) after-heated electrospun silica fibers.

Figure S2. (A) DTG and (B) TGA for silica fibers heated at 40-800 °C at 10 °C /min in air.

Figure S3. N_2 adsorption-desorption isotherm and the calculated pore size distribution of the electrospun mesoporous silica fibers (inset).

Figure S4. TEM images gold colloid synthesized in absence of silica fibers supporting gold seeds. The reduction time is 5 h and the molar ration of PVP K30 repeating units to $AuCl_4^-$ ions, R = 405.

Figure S1.

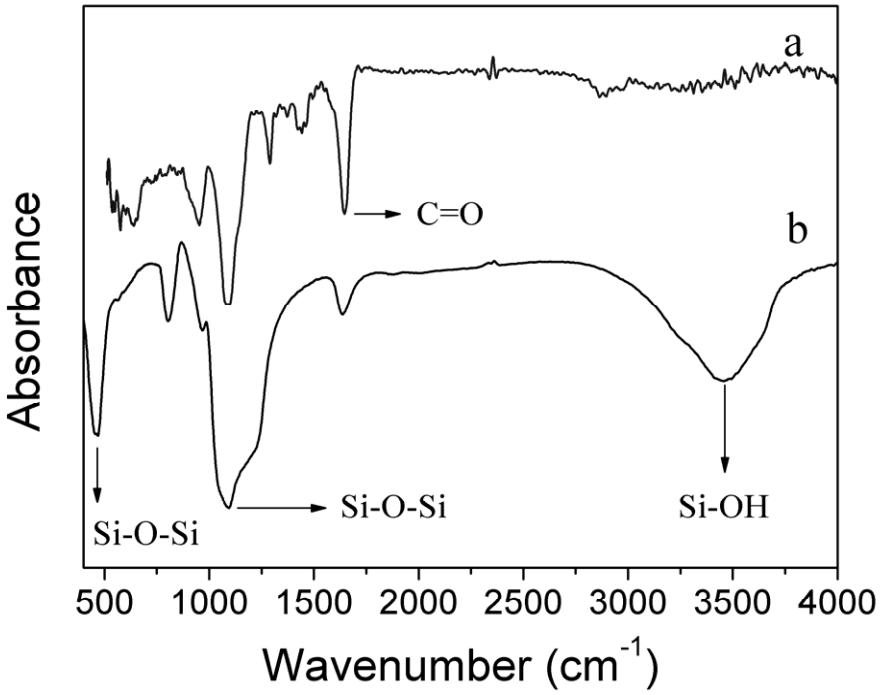
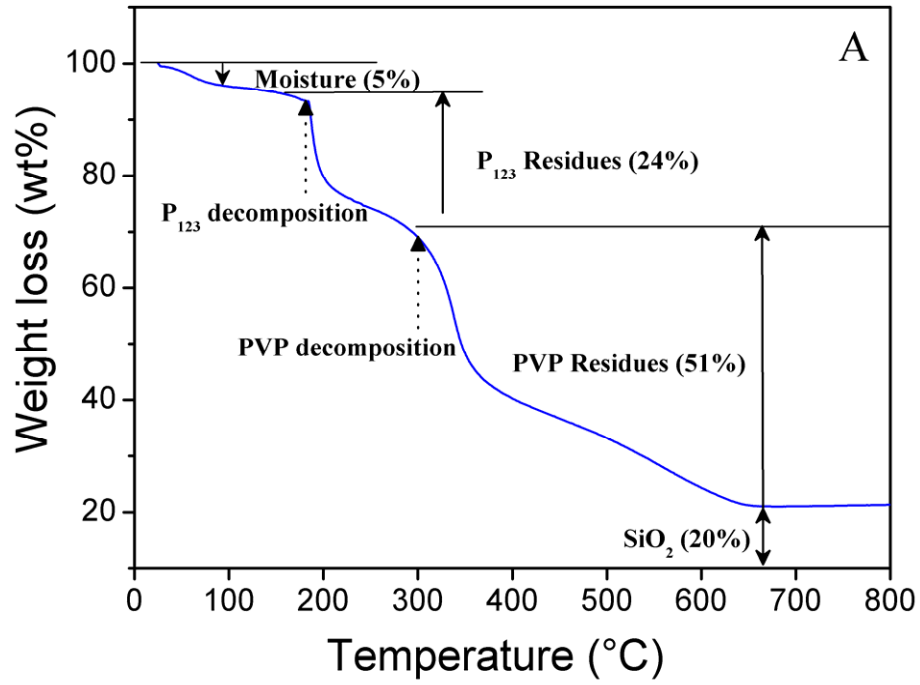

a
b
C=O
Si-O-Si
Si-O-Si
Si-OH
Absorbance
500
1000
1500
2000
2500
3000
3500
4000
Wavenumber (cm-1)

Figure S2.


A
Moisture (5%)
P123 Residues (24%)
P123 decomposition
PVP decomposition
PVP Residues (51%)
SiO2 (20%)
Weight loss (wt%)
Temperature (°C)

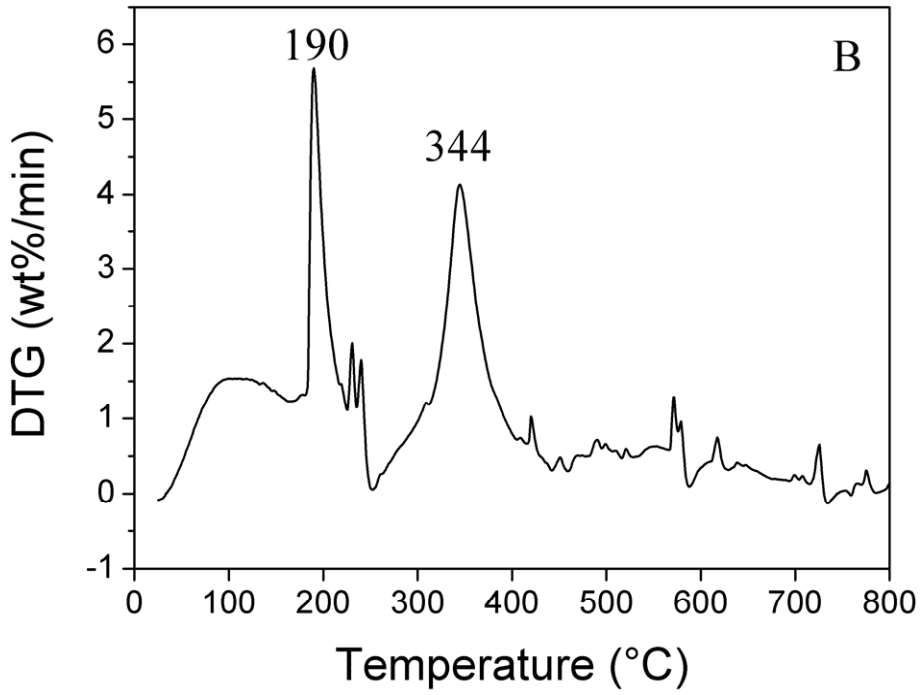

B
190
344
DTG (wt%/min)
Temperature (°C)

Figure S3.

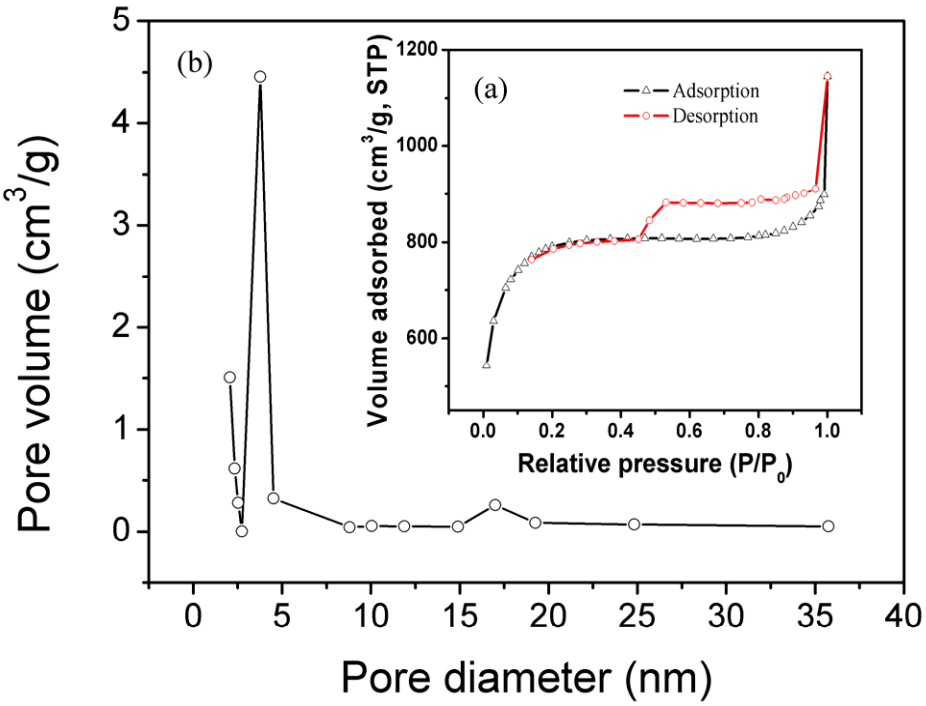

(b)
(a)
Adsorption
Desorption
Volume adsorbed (cm3/g, STP)
Relative pressure (P/P0)
Pore volume (cm3/g)
Pore diameter (nm)

Figure S4.